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INVENTION OF A NEW NUMERICAL SYSTEM.

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In our common decimal system, distinct characters are given to the numbers from one to ten; and it is very well known that instead of ten, any other number, for instance eight, or twelve or sixteen, or even two, may be selected for a base. Such systems have actually been calculated, but they have not come into use: the advantage not being sufficient to counterbalance the inconvenience of changing one system into another.

The subject may be treated, however, in quite a different manner yet. There is no necessity for taking any base at all, and the numbers may be made to progress in their own natural succession; or, to express it in other words, every number, even one, may be made to serve as a base for a certain time. This can be accomplished as follows.

Instead of dividing the original units by ten and ten, as in our common decimal system, we divide them in the natural succession of the numbers themselves, first one, then two, then three and so forth, and for each division we make a new mark in the second column. If in the first column a rest should remain, such rest can never be greater than the number of marks in the second column, because, if the rest was greater by one, a new mark would be made in the second column. The whole theory is based upon the fact that the rest in any column can never be greater than the number of marks in the next column. If the marks in the second third and all following columns, and if all the rests, are divided in the same way, that is, in the natural succession of the numbers 1, 2, 3; the numbers will appear in a very simple form, each consisting of a base aud a rest or correcting part, this rest or correcting part, however, is sometimes naught; thus:

One corrected by naught equals one, one corrected by itself equals two;

Two corrected by naught equals three, two corrected by one equals four, two corrected by itself equals five;

Three corrected by naught equals six, three corrected by one equals seven, three corrected by two equals eight, three corrected by itself equals nine;

Four corrected by naught equals ten, four corrected by one equals eleven, four corrected by two equals twelve, four corrected by three equals thirteen, four corrected by itself equals fourteen;

Five corrected by naught equals fifteen, five corrected by one equals sixteen, five corrected by two equals seventeen, five corrected by three equals eighteen, five corrected by four equals nineteen, fiive corrected by itself equals twenty.

The first twenty numbers are represented by the first twenty letters of the alphabet, excluding the letter *j*, so that *a* stands for 1, *b* stands for 2, &c., and *u* stands for 20. One of the last letters, for instance *x*, may stand for 0 (naught). After twenty, take the sixth letter, *f*, and say

6 corrected by 0 equals 21, equals *fx*,
6 " " 1 " 22, " *fa*,
6 " " 2 " 23, " *fb*,
6 " " 3 " 24, " *fc*,
6 " " 4 " 25, " *fd*,
6 " " 5 " 26, " *fe*,
6 " "itself" 27, " *ff*,

When the second part equals the first part, a stop is to be made and the first part is to be increased by one, hence we have:

7 corrected by 0 equals 28, equals *gx*,
7 " " 1 " 29, " *ga*,

and so forth until we arrive at 20 corrected by itself equals 230, equals *uu*. Now the first part *u*, is to be increased by one, which is *fx*, and we have:

21 corrected by 0 equals 231, equals *fxx*,
21 " " 1 " 232, equals *fxa*.

In this way, all the numbers may be expressed, as the following table shows.

$x = 0$	$k = 10$	$u = 20$	$gb = 30$	$fxx = 231$
$a = 1$	$l = 11$	$fx = 21$	$gc = 31$	. .
$b = 2$	$m = 12$	$fa = 22$	$gd = 32$	. .
$c = 3$	$n = 13$	$fb = 23$	$ge = 33$	. .
$d = 4$	$o = 14$	$fc = 24$	$gf = 34$	. .
$e = 5$	$p = 15$	$fd = 25$	$gg = 35$	$uu\ uu = 26795$
$f = 6$	$q = 16$	$fe = 26$	. .	. .
$g = 7$	$r = 17$	$ff = 27$	. .	. .
$h = 8$	$s = 18$	$gx = 28$	. .	$uuuu\ uuuu$
$i = 9$	$t = 19$	$ga = 29$	$uu = 230$	$= 359026205.$

The general rule is: The second part is to be increased until it equals the first part, and then the first part is to be increased by one.

Every body may convince himself of the correctness of the proceeding by making six short horizontal dashes one over the other, and dividing the same according to the numbers 1, 2, 3, thus . . . . . then drawing 21 short horizontal dashes one over the other and dividing them according to the numbers 1, 2, 3, 4, 5, 6 and then interpolating the numbeas from 7 to 21.